

In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Claim 1. (Canceled)

2. (Original) A computer implemented method of rasterizing a page in a page description language in a multiprocessor integrated circuit comprising the steps of:

interpreting said page in said page description language with a first processor of said multiprocessor integrated circuit;

spawning a subtask from said first processor to another of said processors for sorting polygon edges in increasing minimum Y coordinate.

3. (Canceled)

4. (Currently Amended) The computer implemented method of claim 5 2, wherein each of said other processors is a digital signal processor having an integer multiplier unit and said method further comprising:

spawning a subtask from said first processor to another of said processors for detecting a Y coordinate of edge intersection determined to occur between Y coordinates Ytop and Ybottom via successive midpoint approximation by repeatedly

calculating a difference in the X coordinates of the respective edges at Ytop and Ybottom are computed by

$$\underline{x1step} = \underline{X1} - \underline{x1}$$

$$\underline{x2step} = \underline{X2} - \underline{x2}$$

15 where: x_1 and x_2 are respective X coordinates of two edges at
16 Y_{bottom} ; and X_1 and X_2 are respective X coordinates of said two
17 edges at Y_{top} ,

18 calculating the X coordinates of the respective edges at Y
19 coordinate $Y = (y_1 + y_2) / 2$ by

$$21 \quad X_1 = (x_1 + x_{1step}) / 2$$

$$22 \quad X_2 = (x_2 + x_{2step}) / 2$$

23
24 setting Y_{bottom} as $(Y + Y_{bottom}) / 2$ if $X_2 > X_1$ at Y, and
25 setting Y_{top} as $(Y + Y_{top}) / 2$ if $X_2 < X_1$, and until a Y coordinate
26 of the intersection point is obtained with a desired accuracy.

1 5. (Currently Amended) The computer implemented method of
2 claim 5 2, wherein said first processor is a reduced instruction set
3 processor having a floating point computation unit and said method
4 further comprising:

5 calculating a Y coordinate of edge intersection employing
6 said floating point calculation unit of said first processor by

$$7 \quad Y = (c_1 - c_2) / (b_2 - b_1)$$

8
9
10 where: a first edge has vertices (X_1, Y_1) and (X_2, Y_2) with $b_1 =$
11 $X_1 - X_2$ and $c_1 = X_2 * Y_1 - X_1 * Y_2$; and a second edge has vertices
12 (X_3, Y_3) and (X_4, Y_4) with $b_2 = X_3 - X_4$ and $c_2 = X_4 * Y_3 - X_3 * Y_4$.

Claims 6 to 10. (Canceled)

1 11. (New) The computer implemented method of claim 2, wherein
2 the multiprocessor integrated circuit includes plural other
3 processors and the method further comprising:

4 forming a queue of parallel tasks with said first processor;
5 and
6 dispatching a parallel task from said queue to a next available
7 other processor.